28. Bölüm

COVID-19 ENFEKSİYONU VE KARDİYOVASKÜLER HASTALIKLAR

Mustafa YENERÇAĞ[1]
Uğur ARSLAN[2]

1. COVID-19 hastalarında kardiyovasküler sistemle ilişkili durumların patofizyolojik mekanizmaları nelerdir ?
2. COVID-19 hastalarında kardiyovasküler durumların teşhisinde kullanılan kardiyovasküler biyobelirteçler ve tetkikler nelerdir ?
3. COVID-19 hastalarında ST segment elevasyonsuz akut koroner sendromlara yaklaşım nasıl olmalıdır ?
4. COVID-19 hastalarında ST segment elevasyonlu miyokart enfarktüsüne yaklaşım nasıl olmalıdır ?
5. COVID-19 hastalarında kronik koroner sendromlara yaklaşım nasıl olmalıdır ?
6. COVID-19 hastalarında kalp yetersizliğine yaklaşım nasıl olmalıdır?
7. COVID-19 hastalarında hipertansiyon tedavisine yaklaşım nasıl olmalıdır ?
8. COVID-19 hastalarında supraventriküler aritmilere yaklaşım nasıl olmalıdır ?
9. COVID-19 hastalarında ventriküler aritmilere yaklaşım nasıl olmalıdır?
10. COVID-19 tedavisinde ilaca bağlı pro-aritmik olayları önlemek için QTc nasıl değerlendirilmelidir?

[1] Dr. Öğr. Üyesi Mustafa YENERÇAĞ, Ordu Üniversitesi Tıp Fakültesi Kardiyoloji AD. mustafayenercag@hotmail.com
[2] Prof. Dr. Uğur ARSLAN, Sağlık Bilimleri Üniversitesi, Samsun Eğitim ve Araştırma Hastanesi Kardiyoloji Bölümü ugurarslan5@yahoo.com

kiye sahipken, beta blokerlerin, kalsiyum kanal blokerlerinin, ivabradin ve digoksinin birlikte kullanımı da değerlendirilmelidir. Digoksin hasta için zorunlu kabul edilirse, plazma seviyesi izleme düşünülmelidir (gerekirse doz azaltımı ile birlikte). COVID-19 hastalarında deneysel farmakolojik tedavilerin bilinen tüm doğrudan veya dolaylı (ilaç-ilaç etkileşimleri yoluyla) aritmolojik etkilerini yakın takip edilmelidir.

KAYNAKLAR

1. ESC Guidance for the Diagnosis and Management of CV Disease during the COVID-19 Pandemic. Last updated on 10 June 2020. The European Society of Cardiology. https://www.escardio.org/Education/COVID-19-and-Cardiology/ESC-COVID-19-Guidance
2. Cui J, Li F, Shi ZL. Origin and evolution of pathogenic coronaviruses. Nat Rev Microbiol 2019; 17: 181-192.
3. Zhou P, Yang XL, Wang XG, Hu B, Zhang L, Zhang W, et al. A pneumonia outbreak associated with a new coronavirus of probable bat origin. Nature 2020; 579: 270-273.
4. Yan R, Zhang Y, Li Y, Xia L, Guo Y, Zhou Q. Structural basis for the recognition of SARS-CoV-2 by full-length human ACE2. Science 2020; 367: 1444-1448.
5. Santos RAS, Sampaio WO, Alzamora AC, Motta-Santos D, Alenina N, Bader Met al. The ACE2/Angiotensin-(1-7)/MAS Axis of the Renin-Angiotensin System: Focus on Angiotensin-(1-7). Physiol Rev 2018; 98 :505-553.
6. Hamming I, Timens W, Bulthuis ML, Lely AT, Navis G, van Goor H. Tissue distribution of ACE2 protein, the functional receptor for SARS coronavirus. A first step in understanding SARS pathogenesis. J Pathol 2004; 203: 631-7.
7. Chen C, Zhou Y, Wang DW. SARS-CoV-2: a potential novel etiology of fulminant myocarditis. Herz 2020; 45: 230-232.
8. Chen L, Li X, Chen M, Feng Y, Xiong C. The ACE2 expression in human heart indicates new potential mechanism of heart injury among patients infected with SARS-CoV-2. Cardiovasc Res 2020; 116: 1097-1100.
9. Siedlinski M, Jozefczuk E, Xu X, Teumer A, Evangelou E, Schnabel RB, et al. White Blood Cells and Blood Pressure: A Mendelian Randomization Study. Circulation 2020; 141: 1307-1317.
10. Youn JC, Yu HT, Lim BJ, Koh MJ, Lee J, Chang DY, et al. Immunosenescent CD8+ T cells and C-X-C chemokine receptor type 3 chemokines are increased in human hypertension. Hypertension 2013; 62: 126-33.
11. Inciardi RM, Lupi L, Zaccone G, Italia L, Raffo M, Tomasoni D, et al. Cardiac Involvement in a Patient With Coronavirus Disease 2019 (COVID-19). JAMA Cardiol 2020; 62: 126-33.
12. Arentz M, Yim E, Klaff L, Lokhandwala S, Riedo FX, Chong M, et al. Characteristics and Outcomes of 21 Critically Ill Patients With COVID-19 in Washington State. JAMA 2020; 62: 126-33
13. Zhou F, Yu T, Du R, Fan G, Liu Y, Liu Z, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. Lancet 2020; 395: 1054-1062.
14. Roffi M, Patrono C, Collet JP, Mueller C, Valgimigli M, Andreotti F, et al. 2015 ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation: Task Force for the Management of Acute Coronary Syndromes in Patients Presenting without Persistent ST-Segment Elevation of the European Society of Cardiology (ESC). Eur Heart J 2016; 37: 267-315.
15. Ibanez B, James S, Agewall S, Antunes MJ, Bucciarelli-Ducci C, Bueno H, et al. 2017 ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation: The Task Force for the management of acute myocardial infarction in

patients presenting with ST-segment elevation of the European Society of Cardiology (ESC). Eur Heart J 2018; 39: 119-177.
16. Giannitsis E, Mair J, Christersson C, Siegbahn A, Huber K, Jaffe AS, Biomarker Study Group of the European Society of Cardiology Acute Cardiovascular Care A. How to use D-dimer in acute cardiovascular care. Eur Heart J Acute Cardiovasc Care 2017; 6: 69-80.
17. Soldati G, Smargiassi A, Inchingolo R, Buonsenso D, Perrone T, Briganti DF, et al. Is There a Role for Lung Ultrasound During the COVID-19 Pandemic? J Ultrasound Med 2020; 6: 79-80.
18. Choi AD, Abbara S, Branch KR, Feuchtner GM, Ghoshhajra B, Nieman K, et al. Society of Cardiovascular Computed Tomography guidance for use of cardiac computed tomography amidst the COVID-19 pandemic Endorsed by the American College of Cardiology. J Cardiovasc Comput Tomogr 2020; 6: 89-90
19. Skali H, Murthy VL, Al-Mallah MH, Bateman TM, Beanlands R, Better N, et al. Guidance and Best Practices for Nuclear Cardiology Laboratories during the Coronavirus Disease 2019 (COVID-19) Pandemic: An Information Statement from ASNC and SNMMI. Zenodo 2020;(a head of print)
20. Kucharski AJ, Russell TW, Diamond C, Liu Y, Edmunds J, Funk S, Eggo RM, Centre for Mathematical Modelling of Infectious Diseases C-wg. Early dynamics of transmission and control of COVID-19: a mathematical modelling study. Lancet Infect Dis 2020;20(5):553-558.
21. Stefanini GG, Azzolini E, Condorelli G. Critical Organizational Issues for Cardiologists in the COVID-19 Outbreak: A Frontline Experience From Milan, Italy. Circulation 2020; 141: 1597-1599.
22. Basille D, Plouvier N, Trouve C, Duhaut P, Andrejak C, Jounieaux V. Non-steroidal Anti-inflammatory Drugs may Worsen the Course of Community-Acquired Pneumonia: A Cohort Study. Lung 2017; 195 :201-208.
23. Seferovic PM, Ponikowski P, Anker SD, Bauersachs J, Chioncel O, Cleland JGF, et al. Clinical practice update on heart failure 2019: pharmacotherapy, procedures, devices and patient management. An expert consensus meeting report of the Heart Failure Association of the European Society of Cardiology. Eur J Heart Fail 2019; 21: 1169-1186.
24. Guan WJ, Ni ZY, Hu Y, Liang WH, Ou CQ, He JX, et al. Clinical Characteristics of Coronavirus Disease 2019 in China. N Engl J Med 2020; 382: 1708-1720.
25. Sommerstein R, Grani C. Rapid Response: Re: Preventing a COVID-19 pandemic: ACE inhibitors as a potential risk factor for fatal COVID-19. BMJ 2020; 368: m810.
26. Burrell LM, Risvanis J, Kubota E, Dean RG, MacDonald PS, Lu S, et al. Myocardial infarction increases ACE2 expression in rat and humans. Eur Heart J 2005; 26: 369-75; discussion 322-4.
27. Zhang P, Zhu L, Cai J, Lei F, Qin JJ, Xie J, et al. Association of Inpatient Use of Angiotensin Converting Enzyme Inhibitors and Angiotensin II Receptor Blockers with Mortality Among Patients With Hypertension Hospitalized With COVID-19. Circ Res 2020; 5: 13-15
28. Yenerçağ M, Arslan U, Şeker OO, Dereli S, Kaya A, Doğduş M, et al. Evaluation of P-wave dispersion in patients with newly diagnosed coronavirus disease 2019. J Cardiovasc Med (Hagerstown). 2020 Nov 12. Epub ahead of print.
29. Boriani G, Fauchier L, Aguinaga L, Beattie JM, Blomstrom Lundqvist C, Cohen A, et al. European Heart Rhythm Association (EHRA) consensus document on management of arrhythmias and cardiac electronic devices in the critically ill and post-surgery patient, endorsed by Heart Rhythm Society (HRS), Asia Pacific Heart Rhythm Society (APHRS), Cardiac Arrhythmia Society of Southern Africa (CASSA), and Latin American Heart Rhythm Society (LAHRS). Europace 2019; 21: 7-8.
30. Guo T, Fan Y, Chen M, Wu X, Zhang L, He T, et al. Cardiovascular Implications of Fatal Outcomes of Patients With Coronavirus Disease 2019 (COVID-19). JAMA Cardiol 2020 Epub ahead of print.
31. Yenerçağ M, Arslan U, Doğduş M, Günal Ö, Öztürk ÇE, Aksan G, et al. Evaluation of electrocardiographic ventricular repolarization variables in patients with newly diagnosed COVID-19. J Electrocardiol. 2020; 62: 5-9

31. Yao X, Ye F, Zhang M, Cui C, Huang B, Niu P, et al. In Vitro Antiviral Activity and Projection of Optimized Dosing Design of Hydroxychloroquine for the Treatment of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). Clin Infect Dis 2020. Epub ahead of print.
32. Smith T, Bushek J, Prosser T. COVID-19 Drug Therapy – Potential Options. https://www.elsevier.com/connect/coronavirus-information-center (March 26, 2020; date last accessed).
33. Chan JF, Yao Y, Yeung ML, Deng W, Bao L, Jia L, et al. Treatment With Lopinavir/Ritonavir or Interferon-beta1b Improves Outcome of MERS-CoV Infection in a Nonhuman Primate Model of Common Marmoset. J Infect Dis 2015; 212: 1904-13.
34. Sheahan TP, Sims AC, Leist SR, Schafer A, Won J, Brown AJ, et al. Comparative therapeutic efficacy of remdesivir and combination lopinavir, ritonavir, and interferon beta against MERS-CoV. Nat Commun 2020; 11: 222.